In the claims:

1. (canceled)

2. (currently amended) An implantable medical device (IMD) for implantation in a patient, comprising pacing circuitry configured to selectively produce pacing pulses at a programmable pacing rate for delivery to muscle tissue of a heart of the patient, wherein the IMD is configurable to subject the patient to a stress test, and wherein during the stress test: (i) the pacing rate is increased from a start rate to a stop rate, wherein the stop rate is greater than the start rate, and (ii) stress test data is acquired and stored within the IMD, ~~The implantable medical device (IMD) as recited in claim 1,~~ wherein the IMD is configurable to store timing information specifying a time the IMD is to subject the patient to the stress test, and to subject the patient to the stress test at the time specified by the timing information.

3. (original) The implantable medical device (IMD) as recited in claim 2, wherein the timing information specifies a frequency and a time of day the IMD is to subject the patient to the stress test.

4. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein the IMD is adapted to receive a signal, and configurable to subject the patient to the stress test in response to the signal.

5. (original) The implantable medical device (IMD) as recited in claim 4, wherein the signal is a radio frequency signal.

6. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein the IMD is configurable to detect at least one sign of myocardial ischemia within the patient during the stress test, and wherein the IMD is configurable to abort the stress test when the at least one sign of myocardial ischemia is detected within the patient.

7. (original) The implantable medical device (IMD) as recited in claim 6, wherein the at least one sign of myocardial ischemia comprises deviation of an ST segment of an electrogram (EGM) waveform from an isoelectric baseline of the electrogram (EGM) waveform.

8. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein the IMD is adapted to receive a signal, and configurable to abort a stress test in progress at a time the signal is received.

9. (original) The implantable medical device (IMD) as recited in claim 8, wherein the signal is a radio frequency signal.

10. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein during the stress test, the pacing rate is monotonically increased from the start rate to the stop rate.

11. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein during the stress test, the pacing rate is increased from the start rate to the stop rate by: (i) programming the pacing rate to be the start rate, and (ii) at pre-selected time intervals, reprogramming the pacing rate to be a sum of a current value of the pacing rate and a pre-selected rate-of-change value.

12. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein the stress test data comprises electrogram (EGM) waveform data produced within the IMD.

13. (original) The implantable medical device (IMD) as recited in claim 12, wherein the IMD is coupled to receive a signal from at least one intrathoracic electrode, and wherein the electrogram (EGM) waveform is an intrathoracic electrogram (EGM) waveform.

14. (original) The implantable medical device (IMD) as recited in claim 12, wherein the IMD is coupled to receive a signal generated within the heart, and wherein the electrogram (EGM) waveform is an intracardiac electrogram (EGM) waveform.

15. (original) The implantable medical device (IMD) as recited in claim 12, wherein the electrogram (EGM) waveform comprises an ST segment and an isoelectric baseline, and wherein the EGM data comprises a measurement of deviation of the ST segment from the isoelectric baseline.

16. (currently amended) The implantable medical device (IMD) as recited in claim ~~12~~ 2, wherein the IMD is coupled to receive sensor data, and wherein the stress test data comprises the sensor data.

17. (currently amended) The implantable medical device (IMD) as recited in claim ~~12~~ 2, wherein the stress test data comprises pacing threshold data produced within the IMD and indicative of an amount of energy dissipated by the pacing circuitry while producing the pacing pulses.

18. (currently amended) The implantable medical device (IMD) as recited in claim ~~12~~ 2, wherein the stress test data comprises arrhythmia data produced within the IMD and indicative of detected arrhythmias of the heart of the patient.

19. (currently amended) The implantable medical device (IMD) as recited in claim ~~12~~ 2, wherein the IMD is coupled to receive a first intrinsic depolarization signal and a second intrinsic depolarization signal from the heart of the patient, and wherein the IMD is configurable to operate in a demand mode, and wherein in the demand mode, if the second intrinsic depolarization signal is not received within a predetermined time period, determined by the pacing rate, after the first

intrinsic depolarization signal is received, the pacing circuitry is signaled to produce one of the pacing pulses.

20. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein during an initial portion of the stress test: (i) the pacing rate is programmed such that the pacing rate is increased from a start rate to a stop rate, and (ii) stress test data is acquired and stored within the IMD, and wherein during a final portion of the stress test: (iii) the pacing rate is programmed such that the pacing rate is decreased from the stop rate to the start rate, and (iv) the IMD provides the stress test data stored within the IMD.

21. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein the IMD is a pacemaker.

22. (currently amended) The implantable medical device (IMD) as recited in claim ~~1~~2, wherein pacing pulses received by the muscle tissue of the heart cause the muscle tissue to depolarize.

23. (canceled)

24. (currently amended) An implantable medical device for implantation in a patient, comprising:

pacing circuitry configured to selectively produce pacing pulses at a programmable pacing rate for delivery to muscle tissue of a heart of the patient;

a memory for storing data; and

a control unit coupled to the pacing circuitry and the memory, wherein the control unit is configurable to subject the patient to a stress test, and wherein during the stress test the control unit: (i) programs the pacing rate such that the pacing rate is increased from a start rate to a stop rate, wherein the stop rate is greater than the start rate, and (ii) acquires and stores stress test data in the memory~~The~~

~~implantable medical device (IMD) as recited in claim 23~~, wherein the device further comprise~~sing~~:

a real time clock circuit coupled to the control unit and configured to keep track of time; and

a telemetry unit coupled to the control unit and configured to send and receive signals and data; and

wherein the control unit is configurable to: (i) receive timing data via the telemetry unit, wherein the timing data specifies a time the IMD is to subject the patient to the stress test, and (ii) use the real time clock circuit to subject the patient to the stress test at the time specified by the timing data.

25. (original) The implantable medical device (IMD) as recited in claim 24, wherein the timing data specifies a frequency and a time of day the IMD is to subject the patient to the stress test.

26. (currently amended) The implantable medical device (IMD) as recited in claim 2~~4~~3, further comprising a telemetry unit coupled to the control unit and configured to send and receive signals and data, wherein the control unit is configurable to subject the patient to the stress test in response to a signal received via the telemetry unit.

27. (original) The implantable medical device (IMD) as recited in claim 26, wherein the signal is a radio frequency signal.

28. (currently amended) The implantable medical device (IMD) as recited in claim 2~~4~~3, wherein the control unit is configurable to detect at least one sign of myocardial ischemia within the patient during the stress test, and wherein the control unit is configurable to abort the stress test when the at least one sign of myocardial ischemia is detected within the patient.

29. (original) The implantable medical device (IMD) as recited in claim 28, wherein the at least one sign of myocardial ischemia comprises deviation of an ST segment of an electrogram (EGM) waveform from an isoelectric baseline of the electrogram (EGM) waveform.

30. (currently amended) The implantable medical device (IMD) as recited in claim 2~~4~~3, further comprising a telemetry unit coupled to the control unit and configured to send and receive signals and data, wherein the control unit is configurable to abort a stress test in progress at a time a signal is received via the telemetry unit.

31. (original) The implantable medical device (IMD) as recited in claim 30, wherein the signal is a radio frequency signal.

32. (currently amended) The implantable medical device (IMD) as recited in claim 2~~4~~3, wherein during the stress test, the control unit programs the pacing rate such that the pacing rate is monotonically increased from the start rate to the stop rate.

33. (currently amended) The implantable medical device (IMD) as recited in claim 2~~4~~3, wherein during the stress test, the control unit: (i) programs the pacing rate to be the start rate, and (ii) at pre-selected time intervals, reprograms the pacing rate to be a sum of a current value of the pacing rate and a pre-selected rate-of-change value.

34. (currently amended) The implantable medical device (IMD) as recited in claim 2~~4~~3, further comprising electrode sensing circuitry coupled to receive electrode signals and configured to produce electrogram (EGM) waveform data derived from an electrogram (EGM) waveform, wherein the stress test data comprises the electrogram (EGM) waveform data.

35. (original) The implantable medical device (IMD) as recited in claim 34, wherein the electrode sensing circuitry is coupled to receive electrode signals from at least one intrathoracic electrode and configured to produce intrathoracic electrogram (EGM) waveform data, and wherein the stress test data comprises the intrathoracic electrogram (EGM) waveform data.

36. (original) The implantable medical device (IMD) as recited in claim 34, wherein the electrode sensing circuitry is coupled to receive electrode signals from at least one intracardiac electrode and configured to produce intracardiac electrogram (EGM) waveform data, and wherein the stress test data comprises the intracardiac electrogram (EGM) waveform data.

37. (original) The implantable medical device (IMD) as recited in claim 34, wherein the electrogram (EGM) waveform comprises an ST segment and an isoelectric baseline, and wherein the electrogram (EGM) waveform data comprises data indicative of a deviation of the ST segment from the isoelectric baseline.

38. (currently amended) The implantable medical device (IMD) as recited in claim 2~~43~~, wherein the control unit is coupled to receive sensor data, and wherein the stress test data comprises the sensor data.

39. (currently amended) The implantable medical device (IMD) as recited in claim 2~~43~~, wherein the control unit is coupled to receive pacing threshold data produced within the IMD and indicative of an amount of energy dissipated by the pacing circuitry while producing the pacing pulses, and wherein the stress test data comprises the pacing threshold data.

40. (currently amended) The implantable medical device (IMD) as recited in claim 2~~43~~, wherein the control unit is coupled to receive arrhythmia data

produced within the IMD and indicative of detected arrhythmias of the heart of the patient, and wherein the stress test data comprises the arrhythmia data.

41. (currently amended) The implantable medical device (IMD) as recited in claim 243, further comprising timing/pacing control circuitry coupled to receive a first intrinsic depolarization signal and a second intrinsic depolarization signal from the heart of the patient, wherein the IMD is programmable to operate in a demand mode, and wherein in the demand mode, if the timing/pacing control circuitry does not receive the second intrinsic depolarization signal within a predetermined time period, determined by the pacing rate, after the timing/pacing control circuitry receives the first intrinsic depolarization signal, the timing/pacing control circuitry is configured to signal the pacing circuitry to produce one of the pacing pulses.

42. (currently amended) The implantable medical device (IMD) as recited in claim 243, further comprising a telemetry unit coupled to the control unit and configured to send and receive signals and data, wherein during an initial portion of the stress test, the control unit: (i) programs the pacing rate such that the pacing rate is increased from the start rate to the stop rate, and (ii) acquires and stores the stress test data in the memory, and wherein during a final portion of the stress test, the control unit: (iii) programs the pacing rate such that the pacing rate is decreased from the stop rate to the start rate, and (iv) provides the stress test data stored in the memory via the telemetry unit.

43. (canceled)

44. (original) The system as recited in claim 43, wherein the first signal is a radio frequency signal.

45. (currently amended) ~~The system as recited in claim 43~~A system, comprising:

a programming unit configured to produce a first signal;

an implantable medical device (IMD) for implantation in a patient, wherein the IMD comprises pacing circuitry configured to selectively produce pacing pulses at a programmable pacing rate for delivery to muscle tissue of a heart of the patient; and

wherein the IMD is adapted to receive the first signal from the programming unit and configured to subject the patient to a stress test dependent upon the first signal, and wherein during the stress test: (i) the pacing rate is increased from a start rate to a stop rate, wherein the stop rate is greater than the start rate, and (ii) stress test data is acquired and stored within the IMD, wherein the first signal from the programming unit conveys timing information specifying a time the IMD is to subject the patient to the stress test, and wherein the IMD is configurable to subject the patient to the stress test at the time specified by the timing information.

46. (original) The system as recited in claim 45, wherein the timing information specifies a frequency and a time of day the IMD is to subject the patient to the stress test.

47. (currently amended) The system as recited in claim 4~~5~~3, further comprising a patient activator configured to produce a second signal in response to input from the patient, and wherein the IMD is adapted to receive the second signal.

48. (original) The system as recited in claim 47, wherein the IMD is configurable to subject the patient to the stress test in response to the second signal.

49. (original) The system as recited in claim 47, wherein the second signal is a radio frequency signal.

50. (original) The system as recited in claim 47, wherein the IMD is configurable to abort a stress test in progress at a time the second signal is received.

51. (currently amended) The system as recited in claim 4~~5~~3, wherein the IMD is configurable to detect at least one sign of myocardial ischemia within the patient during the stress test, and wherein the IMD is configurable to abort the stress test when the at least one sign of myocardial ischemia is detected within the patient.

52. (original) The system as recited in claim 51, wherein the at least one sign of myocardial ischemia comprises deviation of an ST segment of an electrogram (EGM) waveform from an isoelectric baseline.

53. (currently amended) The system as recited in claim 4~~5~~3, wherein during the stress test, the pacing rate is monotonically increased from the start rate to the stop rate.

54. (currently amended) The system as recited in claim 4~~5~~3, wherein the stress test data comprises electrogram (EGM) waveform data produced within the IMD.

55. (currently amended) The system as recited in claim 4~~5~~3, wherein the IMD is coupled to receive a first intrinsic depolarization signal and a second intrinsic depolarization signal from the heart of the patient, and wherein the IMD is configurable to operate in a demand mode, and wherein in the demand mode, if the second intrinsic depolarization signal is not received within a predetermined time period, determined by the pacing rate, after the first intrinsic depolarization

signal is received, the pacing circuitry is signaled to produce one of the pacing pulses.

56. (currently amended) The system as recited in claim 4~~5~~3, wherein the programming unit is configured to send data to the IMD and to receive data from the IMD, and wherein the IMD is configured to send data to the programming unit and to receive data from the programming unit.

57. (original) The system as recited in claim 56, wherein during an initial portion of the stress test: (i) the programmable rate is programmed such that the programmable rate is increased from a start rate to a stop rate, and (ii) stress test data is acquired and stored within the IMD, and wherein during a final portion of the stress test: (iii) the programmable rate is programmed such that the programmable rate is decreased from the stop rate to the start rate, and (iv) the IMD is configured to provide the stress test data stored within the IMD to the programming unit.

58.-78 (canceled)